

Split

Work Order ID 117867-1

117867

Page 1

Item ID: D2916-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Cable Guard, 212 Skidtube

Start Date: 5/05/14 Start Qty: 8.00

P

Cust Item ID:

Required Date: 5/05/14 Req'd Qty: 8.00

R

Customer:

Reference:

Approvals:

Process Plan: 

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2916

Rev D

102

0.00

102

Purchasing

Memo

0.00

Purchasing

ISSUE PO 24350

1-Cut as per Dwg D2916 Dwg Rev: _____ Prog Rev: _____ 2-
Deburr if necessary

CL 14/05/26 8

105

Receive & Inspect for Damage & Mat'l Certs

0.00

105

Packaging

Memo

0.00

Packaging

8x 8/14-6-10

115

QC6- Inspect dimensions to drawing

0.00

115

QC

Memo

0.00

Quality Control

CL 14/08/21

8 8

Work Order ID 117867

May-23-14 10:13:07 AM

117867

Page 2

Item ID: D2916-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Cable Guard, 212 Skidtube

Stop

NS2

Start Date: 5/05/14

Start Qty: 8.00

8

Cust Item ID:

Required Date: 5/05/14

Req'd Qty: 8.00

8

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

120

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

N/A

FAI/FAIB

1- Mill as per Folio FB077 Rev: *AA*

& Dwg D2916 Rev: *D* 2-Deburr per dwg D2916

0.00

0.00

(P/O)

2

0

DAS
20
9-89

14-08-23

130

130

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

2

0

DAS
20
9-89

14-08-23

140

140

QC

Quality Control

QC8- Inspect parts - second check

Memo

0.00

0.00

14/08/29

2

0

Work Order ID 117867

May-23-14 10:13:07 AM

117867*

Page 3

Item ID: D2916-1 Accept *N9000040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Cable Guard, 212 Skidtube
 Start Date: 5/05/14 Start Qty: 8.00 *8* Cust Item ID:
 Required Date: 5/05/14 Req'd Qty: 8.00 *8* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Identify as per dwg & Stock Location: _____	0.00							
150									
Packaging	Memo PPP122693	0.00				2x	DAS 28 9-89		AUG 29 2014
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	0.00							MLJ 14-09-02
Quality Control									

Handwritten signature and date: 14-8-29

Picklist Print

May-23-14 10:13:07 AM

Page 1

Work Order ID: 117867

117867

Parent Item: D2916-1

D2916-1

Parent Item Name: Cable Guard, 212 Skidtube

Start Date: 5/05/14

Required Date: 5/05/14

Start Qty: 8.00

Required Qty: 8.00

Comments:

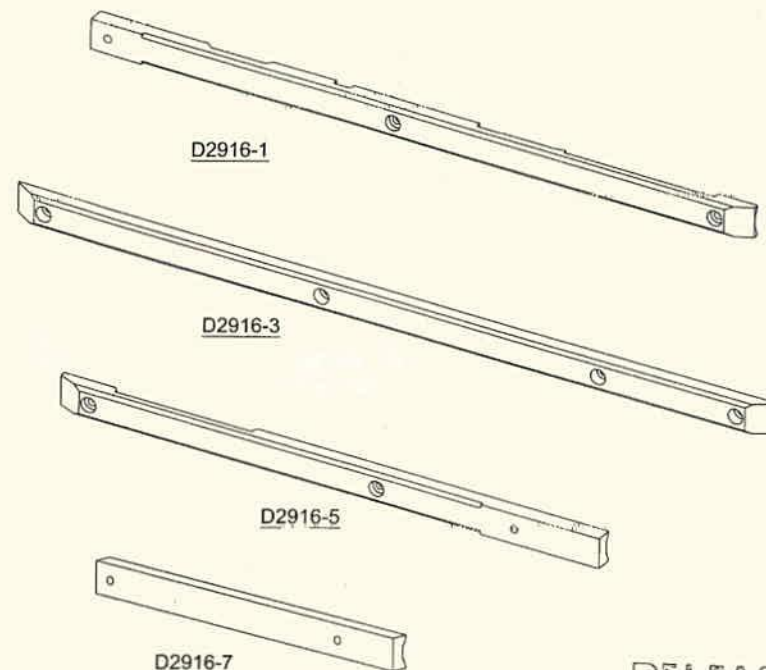
IPP Rev:A New Issue 06-06-19 JLM
IPP Rev:B Now water jet 06-07-14 EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB10		Purchased	No			100	sf	400.0000	0.475	4			
MUHMWB10									**	CXL4/05/28			
UHMW 1" Black - 48"x120" Tivar Mfg.#52480104													

Location	Loc Qty	Loc Code
MAT018	400	
m128267	47	
m128668	353	

~~CXL4/05/28~~ M129293

117867 MJS
1405-06



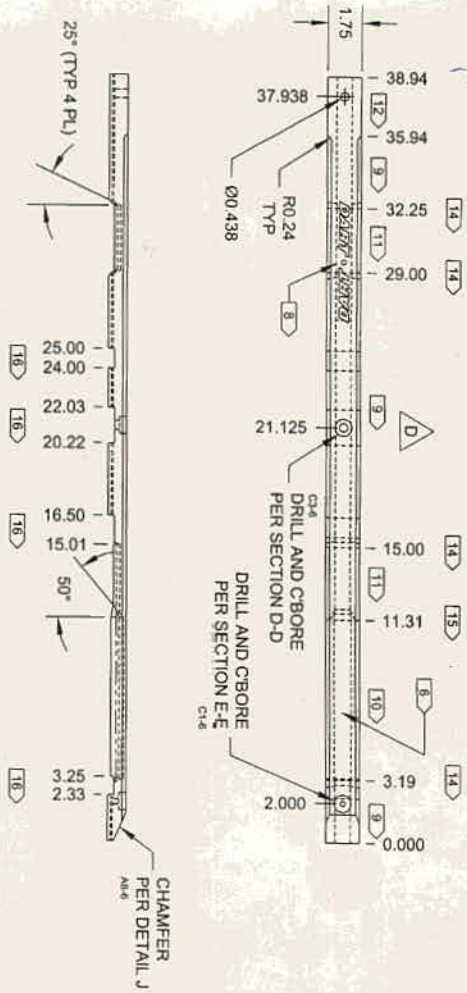
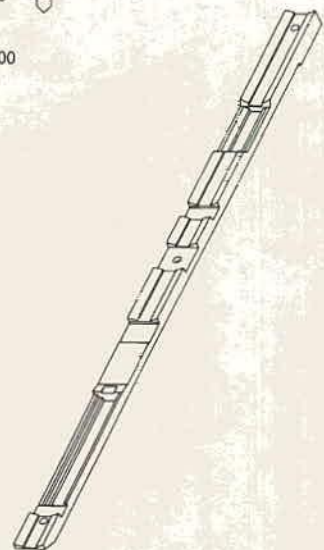
NOTES:

- 1) MATERIAL: UHMW BLACK TIVAR 1000 VIRGIN MATERIAL
REF DART SPEC MUHMB10
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL UNMARKED RADII 0.020 TO 0.040
- 6) IDENTIFICATION: ENGRAVE P/N ON LOWER SIDE TO MAX DEPTH OF 0.010 AND MIN RADIUS OF 0.010
- 7) WEIGHT:
 - D2916-1 = 1.37 lbs
 - D2916-3 = 2.33 lbs
 - D2916-5 = 1.19 lbs
 - D2916-7 = 0.96 lbs
- 8) ENGRAVE TWO DART LOGOS (OPPOSITE AS SHOWN) ON UPPER SIDE TO MAX DEPTH OF 0.015 AND MIN RADIUS OF 0.250
- 9) MACHINE CONSTANT SECTION A-A
- 10) MACHINE CONSTANT SECTION B-B
- 11) MACHINE CONSTANT SECTION C-C
- 12) MACHINE CONSTANT SECTION F-F
- 13) MACHINE CONSTANT SECTION G-G
- 14) 25° ANGLE OF TRANSITION BETWEEN SECTIONS WITH MIN RADIUS OF 0.50
- 15) 50° ANGLE OF TRANSITION BETWEEN SECTIONS WITH MIN RADIUS OF 0.50
- 16) MACHINE SLOT WITH 0.063 RADIUS OF TRANSITION BETWEEN SECTIONS
- 17) ALL HOLES DRILLED ON CENTERLINES

RELEASE
2011-11-02
WNP

D	REVISE MACHINE SLOT. (ZN C5-2, C4-4, C4-5, C6-5)	RF	11.10.07
C	REVISE D-D; ADD L-L, M-M & N-N; FOR D4406-041/-043 COMPATIBILITY	RF	11.08.17
B	ADD K-K FOR D2521 COMPATIBILITY	CP	00.02.24
A	NEW ISSUE	CP	99.09.29
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>		
DRAWN	RF		
CHECKED	<i>[Signature]</i>		
MFG APPR.	<i>[Signature]</i>		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>		
DATE	11.10.07		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D2016	REV. D SHEET 1 OF 6
TITLE CABLE GUARD	SCALE NTS
COPYRIGHT © 1999 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



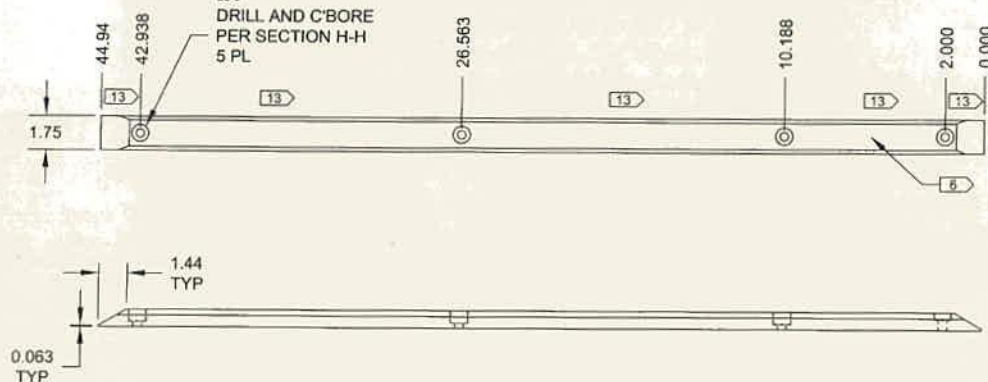
D2916-1

RELEASED
2011-11-02

DESIGN	4	DART AEROSPACE LTD
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	4	DRAWING NO.
MFG. APPR.	4	REV. D
APPROVED	4	D2916
DE APPR.	4	SHEET 2 OF 3
DATE	11.10.07	SCALE
		NTS
		CABLE GUARD

COPYRIGHT © 1999 BY DART AEROSPACE LTD.
ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.

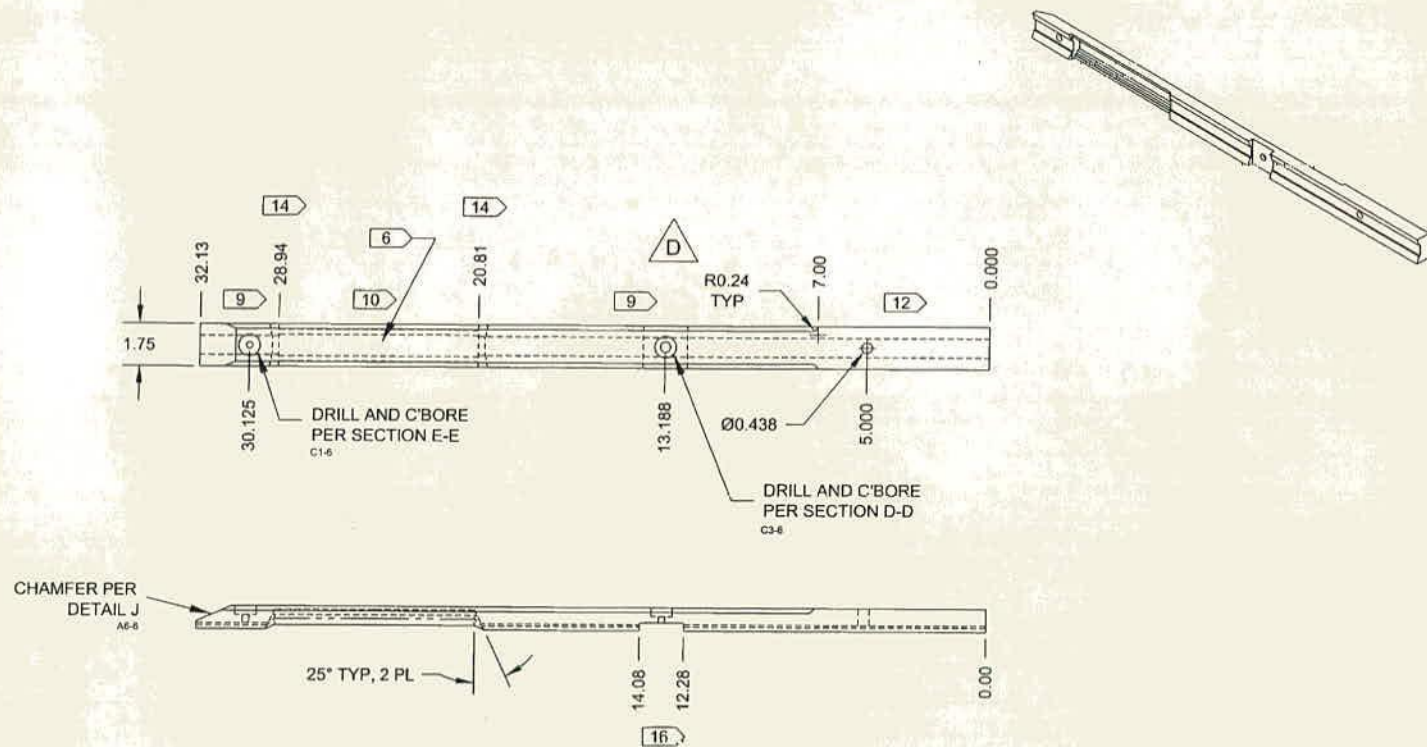
85-6
DRILL AND C'BORE
PER SECTION H-H
5 PL



D2916-3

RELEASED
2011-11-02
WNO

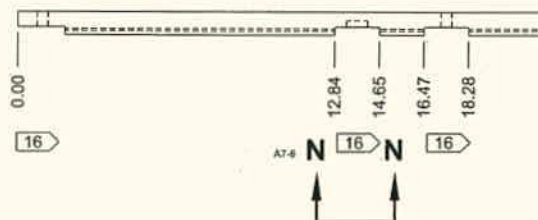
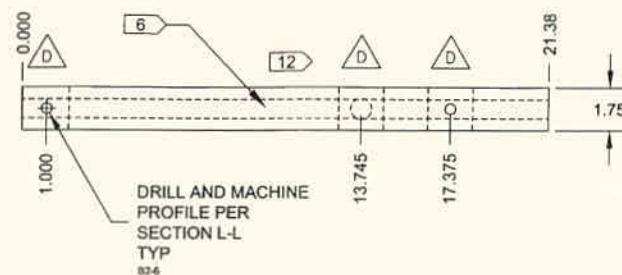
DESIGN	4	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	4	DRAWING NO.	REV. D
MFG. APPR.	4	D2016	SHEET 3 OF 8
APPROVED	4	TITLE	SCALE
DE APPR.	4	CABLE GUARD	NTS
DATE	11.10.07	COPYRIGHT © 1999 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D2916-5

2011-11-02
JMD

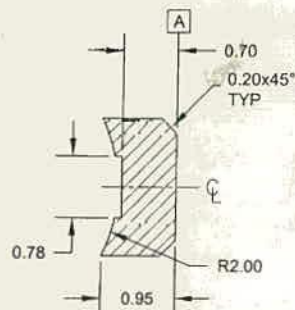
DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. D
MFG. APPR.	<i>[Signature]</i>	D2916	SHEET 4 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CABLE GUARD	NTS
DATE	11.10.07	COPYRIGHT © 1999 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D2916-7

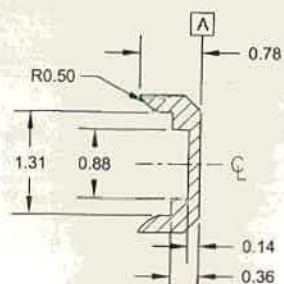
RELEASED
2011-11-02
MD

DESIGN	#	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	#	DRAWING NO.	REV. D
MFG. APPR.	#	D2916	SHEET 5 OF 6
APPROVED	#	TITLE	SCALE
DE APPR.	#	CABLE GUARD	NTS
DATE	11.10.07	COPYRIGHT © 1999 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



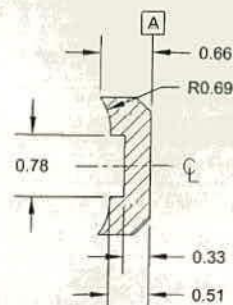
SECTION A-A
SCALE 4X

C3-2
C6-2
C4-4
C6-4



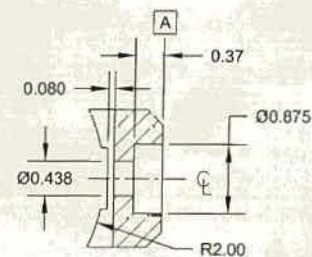
SECTION B-B
SCALE 4X

C3-2
C5-4



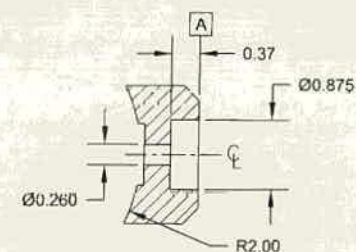
SECTION C-C
SCALE 4X

C5-2
C4-2



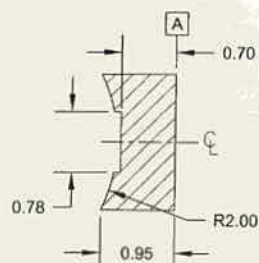
SECTION D-D
SCALE 4X

C4-2
C3-4



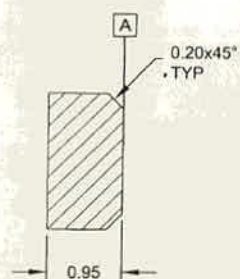
SECTION E-E
SCALE 4X

C3-2
C5-4



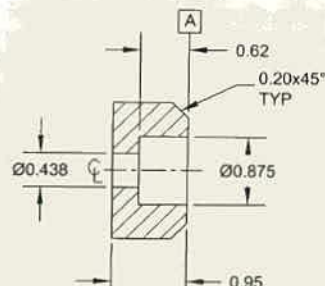
SECTION F-F
SCALE 4X

C6-2
C3-4
C5-5



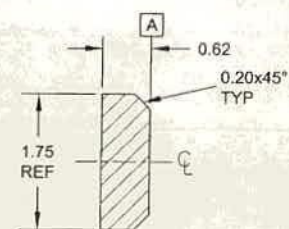
SECTION G-G
SCALE 4X

C3-3
C4-3
C5-3
C6-3
C7-3



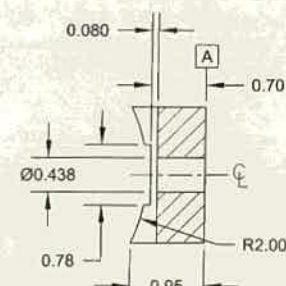
SECTION H-H
SCALE 4X

C6-3



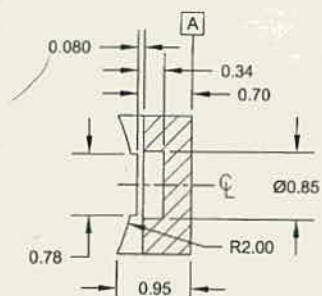
SECTION K-K
SCALE 4X

B3-2
B4-2
B5-2



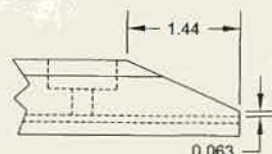
SECTION L-L
SCALE 4X

C5-5



SECTION N-N
SCALE 4X

B5-5



DETAIL J
SCALE 4X

B3-2
B7-4

RELEASED
2011-11-02

DESIGN	4	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	4	DRAWING NO.	REV. D
MFG. APPR.	4	D2916	SHEET 6 OF 6
APPROVED	4	TITLE	SCALE
DE APPR.	4	CABLE GUARD	NTS
DATE	11.10.07	COPYRIGHT © 1999 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO24350**

Purchase Order Date 5/26/2014

PO Print Date 5/26/2014

Page Number 2 of 4

Order From :

TPI INDUSTRIES INC.
148 RUE GOODFELLOW
DELSON, QUEBEC J5B 1V4
CANADA

VC-TPI001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

450-633-0484

Ship To Contact

Ship To Phone

Ship Via:

Day & Ross collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Line Total: \$349.

4 117436 D2521 BEARPAW 6/13/2014 12.00 ✓
Yes
6/13/2014

\$55.36 \$664.

CUT BLANK AS PER FILE

Line Total: \$664.

5 115766 D2671 BEARPAW 6/13/2014 4.00 ✓
Yes
6/13/2014

\$24.42 \$97.

CUT BLANK AS PER FILE

Line Total: \$97.

6 117867 D2916-1 CABLE GUARD 6/13/2014 8.00 ✓
Yes
6/13/2014

\$21.70 \$173.

CUT BLANK AS PER FILE

Line Total: \$173.

5/14-6-10

Note:

5/26/2014

DQA:

Date:

14/09/18

DART
AEROSPACE

QA Closed:

Date:

14/9/15

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

Work Order: <u>117863</u>	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS			
Part No. <u>D 2916-1</u>		Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>
NCR No. <u>14-4218</u>		Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>
		Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>
		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function			<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence			<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other